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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,287	08/11/2006	Shinya Mizone	2006_1255A	7169

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EXAMINER	
HAUTH, GALEN H	

ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
08/05/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,287	MIZONE ET AL.	
	Examiner	Art Unit	
	GALEN HAUTH	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) *5-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made to applicant's addition of claim 11, no new matter has been added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yabuki et al. (PN 6645281) in view of Nakamura et al. (Pub No 2002/0045702).

a. With regards to claim 1, Yabuki teaches a method for forming an ink jet ink (abstract) in which oil-soluble dye aggregates are dispersed in a water medium (col 3 ln 63-65). Yabuki teaches that an oil soluble polymer latex is formed by dispersing particulates of oil soluble polymer as micelles in a water based medium otherwise known as emulsion polymerization (col 32 ln 17-23) in which

the dispersion agent used is one of a cationic, anionic, and nonionic surfactant, water-soluble or water dispersible low molecular weight compound, oligomers, etc. (col 34 ln 40-43, the dispersion agent allows the micelle formation). Yabuki teaches the use of phenol resin in the oil soluble polymer (col 27 ln 25-26) and the use of dyes in the emulsion that contain phenol (col 4 ln 61, thus a resin containing phenol is a phenol resin under the broadest reasonable interpretation). Yabuki does not explicitly teach the use of molecules of ammonium acrylate as a dispersion agent.

b. Nakamura teaches a method for emulsion of a resin into an aqueous medium (¶ 0035, 0036) in which during emulsion the dispersion is formed using emulsifiers that include anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, high molecular surfactants, and polymerizable surfactants that can be used alone or in combination (¶0105). Nakamura teaches that an example of the high molecular surfactant includes poly(ammonium (meth)acrylate) including the monomers (¶ 0109). Nakamura teaches using 0.1-20% by weight emulsifier (¶ 0111) similar to the 0 to 20% taught by Yabuki (col 34 ln 43-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use ammonium acrylate molecules whether in poly or mono acrylate form as a dispersion means as taught by Nakamura for obtaining the latex of Yabuki through micelle emulsion polymerization, because Nakamura teaches the equivalence of ammonium acrylate molecules for dispersion of oil in water polymers in emulsion

polymerization, a similar process to that of Yabuki, presenting a reasonable expectation of success. Given Yabuki teaches the generic use of a similar group of surfactants it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to related art for specific surfactants. With regards to the micelle structure, the use of ammonium acrylate with the oil soluble resin of Yabuki presents a hydrophilic head (ammonium) and a hydrophobic tail (acrylate) on the surfactant that forms the micelle taught by Yabuki by surrounding the oil soluble polymer and dye, thus aggregating the molecules to the dispersed resin.

c. With regards to claim 2, Yabuki teaches using water as a dispersion medium (col 4 ln 1-5).

d. With regards to claim 3, Yabuki teaches adjusting the pH to between 6 and 10 through the use of a neutralizing agent (col 34 ln 28-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the pH to between 6.5-8.5 through optimization of the range taught by Yabuki as the range is completely within the range taught by Yabuki.

e. With regards to claim 4, Yabuki teaches that the oil soluble polymer (phenol resin) is 10-1000 mass parts relative to 100 mass parts of the oil soluble dye aggregate, thus it would have been obvious to one of ordinary skill in the art a the time the invention was made to use 9-14% phenol resin as a weight percent of oil soluble aggregate through optimization of the range taught by Yabuki. Yabuki teaches the use of 0-20% by mass dispersion agent relative to

the total amount of oil soluble dispersant, thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 2-4 weight percent dispersion agent (ammonium acrylate) through optimization of the range taught by Yabuki.

f. With regards to claim 11, Yabuki teaches the inclusion of macromonomers of polyvinyl alcohol in the oil soluble polymer (col 26 ln 61-62).

Response to Arguments

5. Applicant's arguments with respect to claim1-4 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burns et al. (PN 6089704) teaches the use of ammonium acrylates in conjunction with cationic surfactants for the purpose of forming latex (col 5 ln 30-34). Hashimoto et al. (PN 6126280) teaches the inclusion of ammonium acrylate in aqueous ink for the purpose of controlling various properties (col 2 ln 25-35)

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791